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a.) Matteson:

The classic test for anticipation, under 35 U.S.C. §102, requires that every limitation in a claim must be present in a single source reference for that reference to "anticipate" the claimed invention. Applicants respectfully submit that Matteson cannot anticipate the apparatus claimed in amended claims 11-15, original claims 19 and 20, and new claim 21 because every limitation within the respective claims are not present within Matteson.

Matteson discloses an electric resistance welder that includes weld wheel electrodes 26,28, second wheel electrodes 36,38, a first AC power supply 50, and a second AC power supply 60. Matteson discloses that "before the start of the welding process, each pair of wheel electrodes 26,28 and 36,38 is in contact with each other with no weld material between each pair... alternating current from upper to lower weld wheel, ... and then from lower second wheel to upper second wheel... [w]hen no workpiece is between any of the wheel electrodes, the circuit has relatively low resistance. Consequently, the current through the weld wheel electrodes is relatively high..." (Col.5, lines 28-50). In short, Matteson discloses that there is current flowing through the electrodes when there is no workpiece disposed between the electrodes and also when there is current flowing through the electrodes.

Amended claims 11-13, in contrast, claim a welding apparatus that is characterized by:

(a) a means connected to the control device that is triggered by a forward edge of an article entering, or the rear edge of the article exiting, between the welding electrode rollers; and

(b) wherein the control device is configured to receive from the means a signal indicating the edge of the article has entered between the electrode rollers and in dependence thereon to deliver to the switch arrangement a signal releasing the welding current to the electrode rollers; and

(c) wherein the control device is configured to receive from the means a signal indicating the edge of the article has exited between the electrode rollers and in dependence thereon to deliver to the switch arrangement a signal to discontinue the welding current to the electrode rollers.

The device of Matteson, which provides continuous current to the electrode wheels, does not disclose or suggest the claimed device that switches current to the

electrode rollers when an article is disposed between the electrode rollers and discontinues current when the article exits the electrode rollers. The "Background Information" portion of the present specification clearly describes some of the disadvantages of having the edge of an article encounter a live electrode (such as that disclosed by Matteson), and the "Disclosure of the Invention" portion of the present specification clearly describes how the claimed apparatus overcomes those disadvantages.

Dependent claim 12 claims that the means is configured to detect the deflection of at least one of the welding electrode rollers by the article passing between the electrodes. Matteson does not disclose such a means. Matteson discloses that the presence of a workpiece between the electrode wheels is detected by a change in the current within one of the windings 54 (col.4, lines 35-47).

Dependent claim 13 claims that the means for detecting the deflection comprises a setting arrangement by means of which the response to the position of the leading edge of the article to be welded is adaptable to the thickness of the article. Matteson does not disclose a setting arrangement at all, and in particular one that enables a response to the leading edge of an article to be adapted to the thickness of the article at the leading edge.

Independent claim 19 claims an apparatus for welding sheet metal articles that includes: a) a controllable switch arrangement for selectively providing welding current from the welding current source to the at least two electrodes; and b) a switch means for signaling the presence of one of the sheet metal articles between the electrode rollers. The switch means has a first signal output when one of the sheet metal articles is disposed between the electrode rollers, and a second signal output when none of the sheet metal articles are disposed between the electrodes. The switch means changes from the second signal output to the first signal output when an edge of the sheet metal article is disposed between the electrode rollers. As stated above, Matteson does not disclose or suggest such an apparatus. Specifically, neither the: 1) controllable switch arrangement for selectively providing welding current from the welding current source to the electrodes; and/or 2) the switch means for signaling the presence of one of the sheet metal articles between the electrode rollers is disclosed or suggested within Matteson.

Dependent claim 20 further claims that the switch means includes a pivotally mounted arm for mounting one of the at least two electrode rollers, wherein inserting the edge of the sheet metal article to be welded causes the arm and mounted roller to pivot

away from another of the at least two electrode rollers. Matteson does not disclose a switch means having a pivotally mounted arm.

In sum, it is clear from the above that each of the rejected claims includes limitations not found in Matteson. Consequently, Matteson cannot anticipate those claims. Accordingly, it is respectfully requested that this rejection be withdrawn.

Baumgartner:

Baumgartner discloses a method and apparatus for resistance welding coated sheet metal that includes the step of and apparatus for measuring the thickness of the coating (see Abstract). The welding current is adjusted in response to the thickness of the coating (col.2, lines 28-45). There is no disclosure within Baumgartner of a control device that delivers a signal switch arrangement to release welding current to the electrode rollers when a workpiece is disposed between the electrode rollers, and/or one that delivers a signal to the switch arrangement to discontinue the welding current to the electrode rollers when the workpiece has exited between the electrode rollers, as is claimed in claims 11-13. Consequently, Baumgartner does not anticipate the apparatus of claims 11-13.

Likewise, there is no disclosure within Baumgartner of an apparatus for welding sheet metal articles that includes... (i) a controllable switch arrangement for selectively providing welding current from the welding current source to the at least two electrodes; and/or (ii) a switch means for signaling the presence of one of the sheet metal articles between the electrode rollers, wherein the switch means has a first signal output when one of the sheet metal articles is disposed between the electrode rollers, and a second signal output when none of the sheet metal articles are disposed between the electrodes, as is claimed in claims 19-20. Consequently, Baumgartner does not anticipate the apparatus of claims 19-20.

As stated above, the “Background Information” portion of the present specification clearly describes some of the disadvantages of having the edge of an article encounter a live electrode, and the “Disclosure of the Invention” portion of the present specification clearly describes how the claimed apparatus overcomes those disadvantages. Accordingly, applicants respectfully request this rejection be withdrawn.

Grau:

Grau discloses a process and a machine for roller seam welding of a tank. Applicants reviewed Grau, and in particular the cites provided by the Examiner, and find no disclosure within Grau regarding the manner in which current is supplied to the welding rollers as is presently claimed. Consequently, applicants find no disclosure within Grau of the apparatus claimed in amended claims 11-13 or 19-20. It is, therefore, respectfully submitted that Grau does not anticipate the apparatus of claims 11-13.

As stated above, the "Background Information" portion of the present specification clearly describes some of the disadvantages of having the edge of an article encounter a live electrode, and the "Disclosure of the Invention" portion of the present specification clearly describes how the claimed apparatus overcomes those disadvantages. Accordingly, applicants respectfully request this rejection be withdrawn.

11. Claims 14 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Matteson. Specifically, the Examiner indicates that Matteson "fails to teach [sic] setting arrangement having a disk with a plurality of regions of different thicknesses... However, Matteson discloses the method of engagement of the workpiece by either mechanical or position sensor using levers." Applicants respectfully disagree with the Examiner's characterization of the reference and the rejection based thereon.

Matteson discloses that "other types of sensors may be used to determine engagement of the workpieces by the weld and hot wheels. For example, mechanical or positional sensors using levers ... may be used to determine engagement and signal the control circuit 72 to alter the power factor." As shown above, the device of Matteson utilizes constant current flow through the electrodes, regardless of whether there is a workpiece disposed between the electrodes (col.5, lines 28-61). Hence, the further disclosure that a sensor other than a current sensor may be used to alter the power factor simply means that the sensor is indicating the position of the workpiece. There is no disclosure that the sensor is used to release current to the electrodes once the workpiece is received therebetween, or used to discontinue the current once the workpiece exits the electrodes. In addition, there is no disclosure that the sensors and/or levers function as a setting arrangement, not to mention one that has regions in predetermined proportion to the thickness of the articles to be welded.

As stated above, the present specification clearly describes some of the disadvantages of having the edge of an article encounter a live electrode (such as that disclosed by Matteson, and also clearly describes how the claimed apparatus overcomes those disadvantages. In view of these significant differences and the differences identified above, applicants respectfully request this rejection be withdrawn.

As applicants have traversed the objections and rejections raised by the Examiner, it is respectfully requested that the Examiner withdraw the stated objections and rejections, allow claims 11-15, 19-20 and 21, and pass the present application on to issuance. Applicants include herewith a check in the amount of \$18.00 to cover the cost of adding new claim 21. In the event additional fees or charges are due, please charge them to Deposit Account 13-0235.

Respectfully submitted,

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APPENDIX OF CLAIMS MARKED UP TO SHOW CHANGES

11. (Twice Amended) A welding apparatus with welding electrode rollers [and if required with additional intermediate wire electrodes, with a], an AC welding current source that is selectively connectable [, in particular an AC welding current source, that can be connected] to the electrodes by a controllable switch arrangement, and [with] a control device for the switch arrangement, characterized in that:

a means connected to the control device is provided which is triggered by [the position] a forward edge of an article to be welded entering, or the rear edge of an article exiting, between [, with respect to] the welding electrode rollers [of the forward or rear edge, viewed in the welding direction, of an article to be welded,]; and

[in that] wherein the control device is configured to receive from the means a signal indicating [the position of] the edge of the article to be welded has entered between [with respect to] the electrode rollers and in dependence thereon to deliver to the switch arrangement a signal releasing the welding current to the electrode rollers [and/or the intermediate wire electrodes]; and

wherein the control device is configured to receive from the means a signal indicating the edge of the article to be welded has exited between the electrode rollers and in dependence thereon to deliver to the switch arrangement a signal to discontinue the welding current to the electrode rollers.

12. (Once Amended) A welding apparatus according to claim 11, characterized in that the means is configured to detect the deflection [or] of at least one of the welding electrode rollers by the article passing between the electrodes.

13. (Once Amended) A welding [Welding] apparatus according to claim 12 [11], characterized in that the means for detecting the deflection comprises a setting arrangement by means of which the response to the position of the leading edge of the article to be welded is adaptable to the thickness of the article [sheet metal].

14. (Once Amended) A welding [Welding] apparatus according to claim 13, characterized in that the setting arrangement has a disk with a plurality of regions of different thickness in a predetermined proportion to the thickness of the [sheet material of the] articles to be welded.

15. (Once Amended) A welding [Welding] apparatus according to claim 14, characterized in that the disk is rotatably arranged, and the regions are recesses of different depth in the disk which are preferably each marked with the corresponding thickness of the [sheet material of the] article to be welded.